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► To cite this version:

Jackie Krafft, Yiping Qu, Francesco Quatraro, Jacques-Laurent Ravix. Corporate governance, value and performance of firms: New empirical results on convergence from a large international database. *Industrial and Corporate Change*, Oxford University Press (OUP), 2014, 23 (2), pp.361-397. <10.1093/icc/dtt007>. <hal-00786664>

HAL Id: hal-00786664

<https://hal.archives-ouvertes.fr/hal-00786664>

Submitted on 11 Feb 2013

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Title: Corporate governance, value and performance of firms:
New empirical results on convergence from a large international
database

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Acknowledgements:

The authors wish to thank the editors and the two anonymous referees for their insightful comments. We wish to acknowledge the support of CNRS and the University of Nice Sophia Antipolis (GREDEG, UMR 7321). This work is related to the PICK ME project (EU FP7, grant n°266959).

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Abstract:

This paper aims to revisit the link between corporate governance, value, and firm performance by focusing on convergence, understood as the way that non-US firms are adopting US best practice in terms of corporate governance, and the implications of this adoption. We examine theoretical questions related to conventional models (agency theory, transaction cost economics, new property rights theory), which tend to suggest rational adoption of best practice, and contributions that alternatively consider country- and firm-level differences as possible barriers to convergence. We contribute to the empirical literature by using a large international database to show how non-US firms' adoption of US best practice is having an impact on performance.

Keywords: Corporate governance; governance metrics, ratings, rankings and scoring; firm value; firm performance.

JEL Codes: G30

1. Introduction

In the US, corporate governance started to become important for market practitioners in the early 1990s. Today, it is a topic of discussion worldwide. International investors generally regard corporate governance as an important criterion in their investment decisions. According to Global Investor Opinion Survey (McKinsey, 2002), 15% of European institutional investors consider corporate governance to be more important than financial issues such as profit performance or growth potential. Also, 22% of European institutional investors are willing to pay a premium of 19% on average for a well-governed company. More and more countries are tightening the rules and regulation related to governance by adopting new standards inspired largely by US codes of best practice and establishing guidelines for publicly listed companies to try to improve the overall governance of firms. The OECD (2004) *Principles of Corporate Governance* acknowledge that an effective corporate governance system can lower the cost of capital and encourage firms to use resources more efficiently, thereby promoting growth. These factors implicitly and explicitly support the belief that better corporate governance will result in higher firm value and more profitable firm performance.

However, some commentators insist on the importance of the institutional context in which the governance system operates and do not support the idea of convergence towards the US model. They point to a growing co-existence of distinct national models of corporate governance with the US style governance. Up to the mid 1990s, most work on corporate governance was in the context of US firms. However the influential work of La Porta et al. (1997, 1998, 1999, 2000a, 2000b, 2002) has stimulated a large body of work on international comparisons (Levine, 2005; La Porta et al., 2008). Much of this work focuses on differences between countries' legal systems, and studies how these differences relate to differences in the way that economies and capital markets perform.

While research on comparative corporate governance so far has focused mainly on cross-country differences in governance, a substantial body of research on US firms shows that cross-firm differences related to governance have substantial effects on firm value and performance (Gompers et al., 2003; Bebchuk et al., 2008; Core et al., 2006). Much less documented is how non-US firms that adopt US best practice are performing. This paper addresses this issue at the theoretical and empirical levels.

At the theoretical level, agency theory identifies several reasons why good corporate governance increases firm value and performance (Shleifer and Vishny, 1997). Basically, good governance involves better monitoring, greater transparency and public disclosure between principal (investor) and agent (manager). This leads to increased investor trust and a decrease in managers' discretion and expropriation of rents. Well-governed firms are supposed to be less risky, and to have more efficient operations and reduced auditing and monitoring costs. These elements tend to alleviate the cost of capital and generate higher expected cash flow stream, which, in turn, create higher firm valuation and better performance. However, agency theory is based on a well-known set of strict hypotheses which largely neglect the institutional context in which the corporate governance system operates. Thus, it provides a theoretical background to the rational adoption of best practice by firms (US and non-US) irrespective of country-or firm-level differences. This is leading to potential inconclusive results. This paper tries to investigate this area more finely.

At the empirical level many strands of work, including studies of some aspects of corporate governance (e.g. board composition, shareholder rights, executive remuneration, insider ownership, takeover defences, see Hermalin and Weisbach, 1998), single country analyses (especially the US, see Gompers et al., 2003; Bebchuk et al., 2008; Core et al., 2006; but also Russia, see Black, 2001 and Black et al., 2006a; Korea, see Black et al., 2006b; Germany, see Drobetz et al., 2004; and Switzerland,

see Beiner et al., 2006) and cross sectional analyses(e.g. Drobetz et al., 2004, which uses data from a single year), are providing increasing evidence that US corporate governance leads to higher value and performances in both US and non-US firms. This is supporting the hypotheses of Agency theory and other conventional models. However, we need more robust econometric analysis of corporate governance for the value and performance of firms. This paper provides empirical results based on data from the largest corporate governance data provider, *RiskMetrics/Institutional Shareholder Services*. Its data have at least three advantages. First, it is the most extensive database in terms of coverage (number of firms, length of time frame) able to generate robust and generalizable quantitative results. Second, it is based on 55 governance factors spanning 8 categories of corporate governance including board of directors, audit committee, charter/bylaws, antitakeover provisions, compensation, progressive practices, ownership, and director's education. Third, it explicitly considers non-US data, allowing more systematic analysis than has been done so far. We find that claims of convergence, in the sense of the adoption of US best practice by non-US firms, are supported by an economically important and statistically strong correlation between governance, value and performance of these firms. Convergence generates higher performance. However, in our view this should not be the end to discussion on corporate governance.

The paper is organized as follows. Section 2 reviews the related theoretical and empirical research and formulates our hypotheses. Section 3 describes our corporate governance data and summarizes the firm-level value and performance variables. Section 4 reports on the relation between corporate governance measures, stock market performance, Tobin's Q, and operating performance (ROA, NPM). Section 5 concludes.

2. Literature review and hypotheses

2.1. Theory

From a theoretical point of view, corporate governance issues arise due to the separation of ownership and management. Principal-agent theory is the starting point of most discussions of corporate governance (Shleifer and Vishny, 1997). Agency problems can affect firm value and performance via expected cash flows for investors, and the cost of capital. First, agency problems make investors pessimistic about future cash flows being diverted. Good governance increases investor trust and willingness to pay more and renders managers' actions costly and expropriation less likely. Good governance means that 'more of the firm's profit would come back to (the investors) as interest or dividends as opposed to being expropriated by the entrepreneur who controls the firm' (La Porta et al. 2002, p. 1147). Risk and expected return are negatively related since riskier stocks have to be compensated by a higher expected rate of return which involves higher costs related to monitoring. Thus investors perceive well-governed firms as less risky and better monitored and tend to apply lower expected rates of return, which leads to a higher firm valuation. Also, as Jensen and Meckling (1976) showed, better governed firms may have more efficient operations, resulting in higher expected future cash-flow streams.

Second, the cost of capital is negatively related to measures for protection of shareholder rights, and is positively related to general measures of the quality of the legal institutions (La Porta et al., 2002; Gompers et al., 2003). In this case, good governance will decrease the cost of capital since it reduces shareholder's monitoring and auditing costs (Drobetz et al. 2004; Lombardo and Pagano, 2000; Errunza and Miller, 2000). Therefore, better corporate governance structure and practice lead to better corporate performance, lower agency costs, and higher stock performance.

At the firmlevel of analysis, the division between financing (risk-taking) and managing (controlling) functions leads to conflicts (principal-agent problems) between managers (agent) and shareholders or investors (principal). The problem essentially is to persuade the agent to behave fairly and to act on behalf of the principal, and to avoid any discretionary behaviour. The solution to this agency problem is to hire managers on highly contingent, long term incentive contracts *ex ante* in order to align their interests with those of their investors (Shleifer and Vishny, 1997). This formalization, which is based on the complete contract hypothesis, provides the essential requirements of corporate governance oriented to shareholder value, in a context of transparency on contractual relations in organizations. These models have three implications:

- (i) they need strong hypotheses in terms of rationality, based on common knowledge requirements: the principal knows that, according to an optimal remuneration scheme, he can access information hidden by the agent. At the same time, the agent knows that he must deliver his private information to the principal on agreeing to an optimal remuneration contract;
- (ii) they reduce organization problems to simple incentive misalignment problems: internal organization and business strategies are analysed primarily with respect to the elimination of information asymmetries between principals and agents;
- (iii) they focus exclusively on the control exerted by the discretionary power of managers: managers generally have private information that promotes manipulative and opportunistic behaviours.

Complementary approaches have been developed in relation to transaction costs (Williamson 1988, 2000), and property rights (Hart 1995a) and consider weaker rationality hypotheses and the higher costs of negotiating and writing contracts. This literature relies on notions such incomplete contracts and residual rights of control¹ rather than agency problems. Nevertheless, the transaction cost economics

¹ The asset owner has the residual right to decide how to use the asset in cases where the contract is silent on the

and new property rights literatures generally reach the same conclusions as studies of agency theory on the rules of governance of large publicly held companies (Williamson, 1988; Hart 1995b). These rules imply general mechanisms of control which can take various forms (board of directors, proxy fights, hostile takeovers, corporate financial structure), but are oriented always towards monitoring and disciplining management in the interests of shareholders and investors.

It follows that a ‘best’ system of corporate governance that realigns managers’ incentives with the interests of shareholders and guarantees high cash flow and low costs of capital, should be diffused to and adopted by all firms on the premise of using resources more efficiently and stimulating further growth. Since the US model of corporate governance was elaborated with these objectives, it should be adopted across the world by US and non-US firms alike.

This phenomenon is often studied in the literature in terms of the convergence of corporate systems and regulation (Martynova and Renneboog, 2011; Bebchuk and Weisbach, 2010). It should be noted that convergence can mean different things - from incorporation of a system of corporate governance identified as ‘superior’, to a gradual diffusion of rules and practices that lead to a mix of co-existing systems. In a paper criticizing the convergence of financial systems, Hoelzl (2006) explains why conventional models take no account of the institutional context: in the long run international competition will force firms to minimize costs. Cost minimization requires firms to adopt rules to raise external capital at the lowest cost. Competition is assumed to ensure that all corporate governance systems converge to the most efficient system. Countries that fail to adopt the ‘right’ system will inflict costs on their firms, which will be less able to raise capital, and might migrate from the country if inappropriate corporate rules are adopted. Because of this mechanical relationship between competition and governance, supporters of agency theory and

related models of corporate governance argue that the shareholder value model is based on best practice and intrinsically is superior to other models.

However, other arguments have been proposed in the field of corporate governance and there are different hypotheses related to corporate governance which tend to be supported by opposing theories. The stakeholder perspective is the main alternative to the maximization of shareholder value promoted by Agency theory. The stakeholder perspective argues that there are numerous parties that contribute to the firm's economic performance and value. Consequently, all these stakeholders not just the suppliers of capital must be considered as residual claimants (Blair, 1995; Donaldson and Preston, 1995; Kelly et al., 1997; Zingales, 2000; Hansmann, 1996; Driver and Thompson, 2002). Another strand in the literature proposes that the model of corporate governance – understood as shareholder or stakeholder value oriented – cannot be considered in isolation from the institutional context in which it is to be implemented; it claims also that this institutional context has changed significantly since the early 2000s. It should be remembered that, since 2000, financial markets have become much less stable, investors have become more short-termist, and because of their size and sometimes aggressive strategies, more able to impose their views at the board of directors level (Aglietta and Rebérioux, 2005; Tylecote, 2007; Allen, 2005; Coffee, 2005; Becht et al., 2005; Denis and McConnell, 2003; Aoki, 1984). Finally, some contributions in the economics of innovation show that the model of shareholder value may have increased the 'ups and downs' that innovative firms and innovative industries have experienced following the Internet bubble explosion in 2000, and conclude that adopting this model is not neutral and may even be detrimental to the evolution of these firms and industries (Lazonick, 2007; Fransman, 2004; Krafft and Ravix, 2005, 2007; Krafft et al., 2008; Driver and Guedes, 2012; Lhuillery, 2011). These theories suggest that the adoption of the US model in firms is not leading to optimum results because of country-level and/or firm-level differences.

In sum, at the theoretical level, the issue of corporate governance continues to generate critical debate about the convergence of all forms to US best practice.

2.2. Empirics: from US centred analyses to international comparisons

We discuss some key references in the empirical literature according to the way they measure corporate governance,² starting with US centred analyses and moving to international comparisons. It appears that, while well established that particular aspects of corporate governance affect firm value, the overall effect of corporate governance on firm value and performance is still unclear. It also appears that there is some evidence of a convergence with the US model, which needs to be further investigated however. On this basis, we draw a set of hypotheses to be tested using data from *RiskMetrics / Institutional Shareholder Services*.

2.2.1. US data

Investor Responsibility Research Center

The *Investor Responsibility Research Center* (IRRC) publishes detailed listings of corporate governance provisions for individual firms in corporate takeover defences. Data are derived from a variety of public sources (corporate bylaws and charters, proxy statements, annual reports, 10K, and 10Q documents). All sample firms are drawn from *Standard & Poor's 500* and the annual lists of *Fortune*, *Forbes*, and *Business Week*. The IRRC reports (published in 1990, 1993, 1995, 1998) include several hundred firms.

² We do not provide a summary of all the sources of data used in the corporate governance literature. For some recent attempts to provide surveys of the data available, see Ertugrul and Hedge (2009), Koehn and Ueng (2005), or Bebchuk and Hamdani (2009).

Gompers et al. (2003) provide a firm-level governance index (G-Index) based on the prevalence of 24 governance provisions in firms surveyed by IRRC. They add one point for every provision that reduces shareholder rights. They find that firms with higher index values, indicating poor governance, e.g. fewer shareholder rights, have significantly lower valuations although not necessarily lower operating performance, than firms with lower index values. Bebchuk et al. (2008) provide similar results using a governance (entrenchment) index consisting of a smaller set of 6 provisions. Finally, Core et al. (2006), in contrast to Gompers et al. (2003), show that firms with weak shareholder rights exhibit systematic significant operating underperformance.

2.2.2. International comparisons

Credit Lyonnais Securities Asia

The Credit Lyonnais Securities Asia (CLSA) report includes corporate governance rankings on 495 companies in 25 countries. The sample is selected based on two criteria: firm size and investor interest. The CLSA corporate governance questionnaire covers 7 broad categories. The questionnaire is completed by Credit Lyonnais analysts in each country for the companies they cover. They add one point for each 'Yes' response; the percentage of positive responses to the questions in each category is reported.

Klapper and Love (2004) use firm-level data for 374 firms in 14 emerging countries. Their main governance index is the average of the first 6 categories in the CLSA report. They report that better corporate governance is highly correlated with better operating performance and higher market valuation, which gives some support to the idea of convergence and non-US firms adopting US firms' corporate governance practices.

Single-market, survey-based governance index

These firm-specific corporate governance indexes are constructed based on responses to surveys of listed companies in a single market.

Black et al. (2006b) construct a Korean Corporate Governance Index (KCGI) for 515 Korean companies, based on a survey of corporate governance practices in all companies listed on the Korea Stock Exchange in 2001. The authors extracted 38 variables from the survey questions, which they classified into 4 sub-indices before combining the sub-indices into the overall index-KCGI. They report that a worst-to-best change in KCGI predicts a 0.47 increase in Tobin's Q.

Drobetz et al. (2004) document a positive relationship between governance practices and firm valuation in German public firms, based on a broad corporate governance rating related to the German Corporate Governance code. To construct their sample, they sent questionnaires to 253 German firms in different market segments to which they had a 36% response. They assume constant historical ratings since their corporate governance data are limited to one observation, March 2002.

Beiner et al. (2006) sent out a questionnaire based on the suggestions and recommendations of the Swiss Code of Best Practice, to all Swiss firms quoted on the Swiss Stock Exchange in 2003. The index consists of 38 governance attributes across 5 categories. They report that a one point increase in the corporate governance index causes an increase in market capitalization of roughly 8.52%.

These contributions support increasing convergence in systems of corporate governance. However, we need more systematic results based on empirical studies of the following dimensions: data that explicitly consider several countries; corporate

governance measures that include multidimensional aspects of corporate governance; and longer time frames which all more generalizable results.

Other critical work on international comparisons

At the macro level, Allen (2005) notes that in the absence of complete markets, the beneficial properties of shareholder dominance do not necessarily apply and firms that pursue broader interests may show better performance. Also, throughout history and in some fast growing countries such as China, shareholder dominance is not necessarily accompanied by high performance. Aglietta and Rébérioux (2005) characterize the incongruence between shareholder dominance and economies with liquid markets, where investors are short termist, and financial markets are highly instable. Coffee (2005) complements the argument by stressing that the structure of ownership, highly dispersed in the Anglo-American system and more concentrated in the continental European one, is important for explaining the performance implications of corporate governance.

At the micro level, Aoki (1984) noted that Japanese firms were predominantly characterized by an insider corporate governance model. Japanese firms are accountable not just to investors and managers but also to other involved parties (employees, banks, suppliers, customers). The argument that the firm is composed of numerous actors all contributing to its economic performance and value, who should all be rewarded adequately, is revisited in the stakeholder perspective (Blair, 1995; Donaldson and Preston, 1995; Kelly et al., 1997; Mitchell et al., 1997) which claims that shareholders cannot be considered the sole residual claimants. Zingales (2000) refines this argument by defining the firm as the web of specific investments built around a critical resource. Grandori (2004) offers a broader conceptualization of the notion of the governance form that includes important elements of the organizational form of the enterprise at the empirical level. Hansmann (1996) shows that stock value

maximization may not be in the best interests of shareholders.

Finally, at a meso-level, several studies analyse the impact of corporate governance on the development and decline of the ‘New Economy’ at the turn of the millenium. Fransman (2004) analysed the processes and mechanisms that played a significant role in causing the booms and busts in the telecoms industry. The role of financial excesses, largely mediated by complex interactions between investors and financial analysts, is identified as a determinant of the turbulence observed in industry dynamics, i.e. the explosion of the Internet bubble. Lazonick and O’Sullivan (2002) and Carpenter, O’Sullivan and Lazonick (2003) show that the model of corporate governance adopted by US companies influenced the ways that they used their stock and this rendered them more vulnerable when the stock market bubble burst in 2000. Finally, Driver and Guedes (2012) show that greater levels of governance induced less R&D spending in the UK over the period 2000-2005, while Lhuillery (2011) shows that, in France, there is no significant influence on R&D decisions, and raises doubts about the Anglo-Americanization of French firms.

While these critical views are gaining more visibility over time, they do not provide a systematic account of how US standards, in terms of governance, have progressed or not in non-US countries and firms in recent years. We investigate this by examining our research hypotheses using international data at a firm-level.

Our research hypotheses

The relations we want to investigate are described below. The literature so far identifies a global positive relationship between corporate governance and various measures of performance in US, and some non-US data. This leads to the formulation of the following hypotheses on whether there is convergence of non-US firms towards US practices in terms of corporate governance, and whether this generates increases

in performance and value:

H1: Better governed firms should show higher stock market performance (Stock Return or Dividend Yield).

H2: Better governed firms should show higher value (Tobin's Q).

H3: Better governed firms should show higher operating performance (Return on Assets or Net Profit Margin).

3. Governance index constructions and definition of the variables

In this section, we re-examine the links between corporate governance, firm value, and performance, using a very extensive and broad governance database. We use the CGQ index (Corporate Governance Quotient) from *RiskMetrics / Institutional Shareholder Services*. We focus on overall (aggregate) corporate governance ratings for a large range of international firms. Our sample is constructed using information on more than 2500 firms in 24 countries (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong (China), Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Singapore, South Korea, Spain, Sweden, Switzerland, UK). Our sample-firms come from 25 industries: Automobiles & Components, Banks, Capital Goods, Commercial Services & Supplies, Consumer Durables & Apparel, Consumer Services, Diversified Financials, Energy, Food Beverage & Tobacco, Food & Staples Retailing, Health Care Equipment & Services, Hotels Restaurants & Leisure, Household & Personal Products, Insurance, Materials, Media, Pharmaceuticals & Biotechnology, Real Estate, Retailing, Semiconductors & Semiconductor Equipment, Software & Services, Technology Hardware & Equipment, Telecommunication Services, Transportation, Utilities. The CGQ is calculated on the basis of a rating system that incorporates 8 categories of

corporate governance, leading to an improved qualitative measure of 55 governance factors. The study period covered is 2003-2008, which includes the largest number of reporting firms with complete and consistent data. The study time frame is also central because it corresponds to the post financial crash era when several major corporate scandals were observed, leading many investors and managers to realize that good governance was important and must be priced adequately.

In what follows, we provide details on the construction of our corporate governance measure and the variables used in the empirical analysis.

3.1. Corporate Governance Quotient

Prior to being acquired by *RiskMetrics* in 2007, *Institutional Shareholder Services* operated independently as the world's largest corporate governance data provider. *Institutional Shareholder Services* developed its corporate governance rating system to assist institutional investors to evaluate the impact that a firm's corporate governance structure and practices might have on performance. The rating is aimed at providing objective and complete information on firm's governance practices. Importantly, these ratings are not tied to any other service provided by *RiskMetrics* / *Institutional Shareholder Services* and firms do not pay to be rated, although they are invited to check the accuracy of the ratings. The only way a firm can improve its rating is to publicly disclose changes to its governance structure and / or practices.

The CGQ is the output of a corporate governance scoring system that evaluates the strengths, deficiencies, and overall quality of a company's corporate governance practices. It is updated daily for over 7,500 companies worldwide. The ratings are based on a single set of policy standards inspired by OECD principles.

Each company's CGQ rating is generated from detailed analysis of its public

disclosure documents (i.e. Proxy Statement, 10K, 8K, Guidelines...), press releases and company web site. CGQ is calculated by adding 1 point if the firm under scrutiny meets the minimum accepted governance standard. The score for each topic reflects a set of key governance variables. Most variables are evaluated on a standalone basis. Some variables are analysed in combination on the premise that corporate governance is improved by the presence of selected combinations of favourable governance provisions. For example, a company whose board includes a majority of independent directors, and independent board committees (audit, etc.) receives higher ratings for these attributes in combination than it would have received for each separately. Next, each company's CGQ is compared with other companies in the same index (here the index is MSCI EAFE index).³ For example, Company A scores 24% (or 0.24) for its CGQ index, this means that Company A is performing better (outperforming) in relation to corporate governance practices and policies than 24% of the companies in the MSCI EAFE index.

3.1.1. The value of multiple attributes

The reason why we use multiple attributes of governance in this study is that, for a long time, single attribute contributions were providing often inconsistent, even contradictory results. For example, Hermalin and Weisbach (2003), in a seminal article, showed that the predominance of external members on company boards increased market performance, while Bhagat et al. (2004) argued that firms linked by long-term relationships with investors (relational investors) obtained better results. The emergence of systematic work with multi attributes for governance is quite recent and coincides with the development of databases dedicated exclusively to this issue.

³ This is a stock market index of foreign stocks, from the perspective of North American investors. The index is market capitalization weighted (meaning that the weight of securities is determined based on their respective market capitalizations.) The index aims to cover 85% of the market capitalization of the equity markets of all countries that are a part of the index. It is maintained by Morgan Stanley Capital International. EAFE is Europe, Australia, Asia and Far East.

Several databases have been developed in recent years: RiskMetrics / International Shareholder Services (RM / ISS), The Corporate Library (TCL), and Governance Metrics International (GMI). They all systematically assess the strengths, weaknesses and characteristics of firms' governance practices in relation to the standard of maximizing shareholder value. Adoption of this standard at firm-, industry- or country-level is based on an index that integrates various dimensions of governance. These databases, therefore, collect the most comprehensive information possible on these different dimensions.

In a recent Special Issue, Bebchuk and Weisbach (2010) argued that in the field of corporate governance some areas (shareholder activism, corporate directors, and executives and their compensation) will achieve greater centrality in the future. In another paper, Lhuillery (2011) notes that multiple practices are difficult to consider simultaneously, and often are synthesized in the literature within indexes approximating the measure of intensity of alignment using the number of shareholder oriented governance practices implemented. The positive coefficient of these indexes suggests that the effects of shareholder oriented practices on performance are additive: every additional shareholder-oriented practice implemented adds a positive marginal benefit, whatever the combination of the adopted practices. Lhuillery's study shows that two core governance practices in the shareholder model – compensation schemes and voting rules – have no influence however.

Concerning the data we use, ISS Risk Metrics has implemented a rating system which considers variables in isolation and also in combination in the belief that corporate governance is enhanced by selected combinations. Three aspects are under scrutiny: i) board composition and ownership, i.e. board is controlled by independent outside directors and ownership by officers and directors, considered as significant; ii) board composition and key committee structure, i.e. board is controlled by independent outside directors, and board committees (audit, nominating, and compensation) are

composed solely of independent outsider directors; iii) proxy contest defences, i.e. no unequal voting rights, no classified board, no limit on the ability to call special meetings, and no ability to act by written consent allowed. The data provide sub-scores for each category, but only for Canada and the UK; therefore, we do not include sub-scores in the present study.

3.1.2. Corporate governance variables

Table 1 presents the corporate governance variables. A detailed description of governance standards using the eight categories (board of directors, audit committee, charter/bylaws, antitakeover provisions, compensation, progressive practices, ownership, and director education) is provided in the Appendix.

INSERT TABLE 1 ABOUT HERE

Our sample is composed of 2,662 non-US firms operating in 24 countries and 25 industries. As in the original database, CGQ refers to 55 governance factors spanning the 8 categories of corporate governance. Thus the data are firm-level; all our scores are relative (percentiles), allowing for within-country as well as cross-country differences (the data explicitly consider anti-takeover provisions under national (local) law). Table 2 presents the number of firms by country/by industry.

INSERT TABLE 2 ABOUT HERE

3.2. Other Firm Variables

In order to include firm-level accounting data, we merged the *RiskMetrics / Institutional Shareholder Services* database with DataStream. We use Stock Return and Dividend Yield to measure firms' stock performance, Tobin's Q to measure the firm's market valuation, and Return on Assets (ROA) and Net Profit Margins (NPM)

as the two main measures of firm operating performance (see more detail on the choice of these dependent variables in paragraphs 4.2.-4.4. below). A summary of all the variables used in this article is contained in Table 3.

INSERT TABLE 3 ABOUT HERE

Denis (2001) argues that endogeneity is an important issue in analyses of the relationship between governance and performances. Firms with higher market value and higher performance might simply be more likely to choose better governance structures. One way to mitigate the problem of causality is to add appropriate control variables to test whether the relationship between governance and firm valuation is caused by some omitted variables. Therefore, we include the following control variables in our study: size, ratio of R&D to sales, sales growth, intangible concentration, market to book value, and market capitalization.

We use the natural log of Total Assets, denoted as Size, to measure firm size. We control for Sales Growth simply because firms with good growth opportunities usually show a higher Tobin's Q. We control for intangible concentration because this can result in a higher Tobin's Q as, generally, market values intangibles are higher than their book values. We use the Fixed Capital to Total Sales ratio to measure the relative importance of fixed capital in the firm's output, denoted Intang in the study. For stock market performance, we include the natural log of market capitalization (LnMC) and natural log of market to book value (LnMTBV) to control for Size and the different investment opportunities available, and also growth opportunities. Since undoubtedly there are other industry-related factors that affect the valuation of firms, we control for these industry factors through a set of SIC industry dummy variables.

4. Corporate governance and firm performance

Our analysis proceeds in three steps. The first explores the relationship between governance and the firm's stock market performance. To investigate this relationship we use two measures, Stock Return and Dividend Yield. The second step explores the relationship between governance and firm valuation, using Tobin's Q. The third step tests the relationship between governance and firm's operating performance based on ROA and NPM.

4.1. Summary Statistics

We begin by presenting some basic summary statistics for the variables included in this study.

INSERT TABLE 4 ABOUT HERE

Table 4 provides descriptive statistics for all the variables included in our analysis. CGQ ranges from 0 to 1, with mean and median 0.54 and 0.56, and standard deviation of 0.28. Stock Return ranges from -0.99 to 6.41, with mean and median 0.14 and 0.10, and standard deviation of 0.43. Dividend yield ranges from 0 to 45.98, with mean and median 2.41 and 1.89, and standard deviation of 2.08. Tobin's Q ranges from 0.003 to 8.93, with mean and median 1.05 and 0.85, and standard deviation of 0.87. ROA has mean and median of 0.07 and 0.06, standard deviation of 0.084, and minimum and maximum values of -0.79 and 0.96. NPM has mean and median of 0.17 and 0.10, standard deviation of 0.49, and minimum and maximum values of -7.26 and 6.74.

Table 5 provides summary statistics for the variables when CGQ is split into five quintiles (5%, 25%, 50%, 75%, and 95%). We observe a slight upward tendency in Tobin's Q as CGQ increases; the mean of Tobin's Q for the highest quintile is 1.19 and 0.96 for the lowest quintile. We include Size in the table to show that this

tendency is not observable for this variable. We can conclude that those firms with the highest CGQ ratings are not necessarily the largest companies.

INSERT TABLE 5 ABOUT HERE

Table 6 provides the correlation among some of the main variables, with pair-wise correlation below the diagonal and Spearman correlation above diagonal. Significance levels are indicated by asterisks. The pair-wise correlation of CGQ and Tobin's Q is 0.0915 and their Spearman correlation is 0.1632; both are significant at the 1% level. The correlation between CGQ and Size is negative at -0.2658, and the Spearman correlation is negative at -0.0419, but not significant.

INSERT TABLE 6 ABOUT HERE

4.2. Governance and stock market performance

The choice of Stock Return and Dividend Yield is straightforward. If corporate governance matters for firm performance, and this relationship is taken account of by the market, then the stock price should adjust quickly to any relevant change in governance. Dividend Yield generally is used as a measure of profitability (see most of the central references in the empirical literature, Gompers et al., 2003; Drobetz et al., 2004, that argue that dividend yield has the advantage of being directly observable and stationary)⁴. Therefore, we expect that firms with better governance

⁴As suggested by one referee, dividend yield could also be viewed as a proxy for management that prioritizes shareholder claims to profits. The relationship between dividend yields and the strength of shareholder rights is related to two strands of agency literature. The *free cash flow hypothesis* (Jensen, 1986) suggests that managers of firms with weak shareholder rights should opportunistically attempt to retain cash within the firm rather than pay it out to shareholders. Alternatively, the *substitution hypothesis* (La Porta et al., 2000) argues that to be able to raise external funds on attractive terms, a firm must establish a reputation for moderation in expropriating shareholders. One way to establish such a reputation is by paying dividends. In both approaches, the empirical prediction is a

will be more profitable and will pay out higher dividends. An important issue in this kind of analysis is endogeneity, since firms with better performance might simply be more likely to choose better governance structures. Black et al. (2006a,b) point to evidence of endogeneity in other studies of corporate governance.⁵ Here we carry out an endogeneity test for the CGQ index with Stock Return and Dividend Yield as dependent variables. The results are reported in Table 7 and suggest that endogeneity is an issue if the CGQ index is used to explain the observed Stock Return variance, but is less important if the dependent variable is Dividend Yield.

INSERT TABLE 7 ABOUT HERE

This suggests an instrumental variable (IV) estimation to analyse the relationship between Stock Return and CGQ. Table 8 reports the results of the IV estimation with CGQ, LnMC and LnMTBV as the independent variables. It reports sample size, adjusted R square, coefficients, standard errors and significance levels.

INSERT TABLE 8 ABOUT HERE

We find a positive relationship between our governance indicator and Stock Return, significant at 1%. We can now investigate the relationship between CGQ and Dividend Yield. Table 9 reports the results of an ordinary least squares (OLS) estimation using CGQ, LnMC, LnMTBV, industry dummies and country dummies as the independent variables.

INSERT TABLE 9 ABOUT HERE

positive association between dividend payouts and the strength of shareholder rights. In the present interpreted this way: the CGQ is proxying how the management is aligned in the interests of the shareholders.

⁵ See, e.g., Hermalin and Weisbach (1998), Durnev and Kim (2005), Himmelberg et al. (1999, 2001), Bhagat and Black (2002), Gillan et al. (2003).

Again, the relationship between CGQ and Dividend Yield is positive and statistically significant at 1%. This can be explained as firms that have better governance show higher performance on the stock market, or that improving firm governance may result in improved stock market performance measured by Stock Return and Dividend Yield. A one percentage change in the governance indicator can result in an approximate 0.10% change in Stock Return and a 0.73% change in Dividend Yield⁶.

4.3. Governance and Firm Value

If good governance can improve firms' stock returns, in the long run, this should translate into a higher firm valuation. Tobin's Q plays an important role as a measure of the firm's value in many financial interactions.⁷ Defined as the ratio of the firm's market value to the replacement cost of its assets, it has been employed in a number of governance studies. Following Gompers et al. (2003), Bebchuck et al. (2008), Black et al. (2006a,b), we use Tobin's Q to measure firm value. We define our Tobin's Q as in Chung and Pruitt (1994). The approximate Q is defined as follows:

$$\text{Approximate Q} = (\text{MVE} + \text{PS} + \text{DEBT}) / \text{TA}$$

where MVE is the product of the firm's share price and the number of common stock shares outstanding, PS is the liquidation value of the firm's outstanding preferred stock, DEBT is the value of the firm's short term liabilities net of its short term assets

⁶ We would offer the caveat that counting the observations for CGQ (2,662 firms over 6 years) would normally yield around 15,000 observations. However, including other variables of performance reduces the number of observations due to missing data for some firms for some years.

⁷ Future research should try to assess the effects of CGQ on other indicators proxying for firm valuation, such as the percentage price premium (Colombelli, 2010). Some studies show the existence of a robust econometric relationship between the firm's Tobin's Q and total factor productivity (TFP) (Antonelli and Colombelli, 2011). In this context, it would be interesting to investigate the effects of CGQ on the productivity performance of the sampled firms.

plus the book value of the firm's long term debt, and TA is the book value of the firm's total assets.

Before proceeding to our estimation, we check the extent to which endogeneity is an issue when Tobin's Q is regressed against CGQ. The test is reported in Table 10, and suggests that CGQ is not endogenous in this framework.

INSERT TABLE 10 ABOUT HERE

The regression results are reported in Table 11.

INSERT TABLE 11 ABOUT HERE

We use a pooled OLS regression. We regress Tobin's Q against CGQ, control variables and industry dummies. We also show the results of estimations including firm-level fixed effects (models 4 and 6). We progressively add control variables in regressions (1)-(6). The adjusted R squares are 0.1684, 0.1749, 0.1875, 0.3483, 0.4132 and 0.3603 respectively. CGQ is highly significant in each regression. Column 1 is a simple regression of Tobin's Q against CGQ. It demonstrates a significant positive relationship with the coefficient equal to 0.2583. In Table 11 column 2, which includes some control variables, we see that the coefficient of CGQ remains fairly stable at 0.2559, while the inclusion of more control variables (column 3) leads to a higher coefficient, 0.4354, significant at 1%. Finally, the model with all control variables shows a positive and significant although slightly lower coefficient of 0.2629. Columns (4) and (6) show the results of the regression using fixed effect estimators. While the relationship between CGQ and Tobins' Q remains positive and significant (1% and 5% respectively), the coefficients are smaller (0.1237 and 0.1182 respectively).

4.3.1. Robustness check

We conducted two tests to check the robustness of our results. First, following Gompers et al. (2003), La Porta et al. (2002), Bebchuck et al. (2008), and others, we employ industry – adjusted Tobin’s Q, defined as Tobin’s Q minus the median Q of the corresponding industry. Accordingly, we exclude industry dummies from the regression. The relationship between firm value and governance does not change. Second, we run annual regressions. The relation remains valid and significant, but its intensity varies from year to year. The impact of CGQ on Tobin’s Q generally increases, with exceptions in 2005 and 2006. The results are shown in Table 12.

INSERT TABLE 12 ABOUT HERE

4.4. Governance and operating performances

We explore the relationship between firms’ operational performance and governance. We use ROA and NPM as measures of performance. Consistent with the analysis conducted so far, we begin by investigating whether or not CGQ is endogenous in our empirical context. Table 13 reports the results of the tests, which suggest that CGQ is endogenous with respect to the ROA, but not NPM.

INSERT TABLE 13 ABOUT HERE

We next test the relationship between ROA and CGQ estimated using the IV technique. The results of the regressions are reported in Table 14. In regression 1-3, we regress ROA on CGQ and the industry dummies, and add control variables progressively - Size, Sales Growth, R&D/Sales, and Intang.

INSERT TABLE 14 ABOUT HERE

The results show a positive and significant relationship between governance and ROA. The coefficient is significant at the 1% level. Firms with weaker corporate governance are less profitable. This relationship becomes stronger with the addition of control variables.

In Table 15, the dependent variable is NPM, and the independent variable is CGQ; it also includes two control variables: Size and Market to Book Value.

INSERT TABLE 15 ABOUT HERE

The results again show a significant positive effect of CGQ, even when firm-level fixed effects are taken into account.

Summing up the results obtained in section 4, we addressed the question of whether good overall corporate governance had a positive impact on firm value and performance, focusing on non-US firms⁸. We investigated the link between corporate governance and firm value and performance, using a large sample database, *RiskMetrics / Institutional Shareholder Services*, and the CGQ. Our sample covers 2,662 firms from 24 countries and 25 industries. On stock market performances, there is a positive relationship between CGQ and Stock Return (2SLS, significant at 1%), and a positive relationship between CGQ and Dividend Yield (OLS, significant at 1%). On firm value, there is also a positive relationship between CGQ and Tobin's Q, (OLS, significant at 1%; FE, significant at 5%). On operating performance, there is a further positive relationship between CGQ and ROA (2SLS, significant at 1%), and a

⁸These results could be to some extent due to country concentration, above all for what concerns UK and Canada that are reputed being influenced by the US model of governance. A robustness check to our analysis should also look at the subsample of Japanese firms, as Japan is alternatively considered as having its own model of governance. The results of such estimations are provided in Appendix B, in which it can be observed that CGQ either shows a positive and significant effect or is not significant.

positive relationship between CGQ and NPM (OLS, significant at 10%; FE, significant at 5%). We thus report several important findings supporting the idea that convergence towards US firms practice in terms of corporate governance operates and generates higher performance.

5. Conclusion

The aim of this paper was to revisit the link between corporate governance, value and performance of firms by focusing on convergence, understood as the way in which non-US firms are adopting the US best practice, and its implications.

We investigated theoretical questions, where conventional models (agency theory, transaction cost economics and the new property rights theory) tend to suggest rational adoption of best practice while some recent contributions point to country- and firm-level differences that might disturb convergence. We can conclude that, at a theoretical level, the issue remains unresolved and critical debate continues on the emergence of US best practice to which all other systems (and the firms composing these systems) should converge, including the possibility that there is simply no overall ‘best’ system. In our view, the question of convergence must take account of country-level and firm-level differences in order to advance the theory.

On an empirical level, several contributions show that firms are increasingly adopting US firms’ best practice related to corporate governance. We have identified some problems related to these contributions and suggested the need for more robust and sound econometric analyses to derive new results on corporate governance, value, and firm performance. Existing studies do not explicitly consider non-US firms in several countries, and consider short periods of time. We contribute to the empirical literature by using a large international database and showing that non-US firms are increasingly adopting US best practice, which is having a positive impact on their

performance. These results confirm the results in the literature, but use more complete firm-level data in relation to corporate governance components and country coverage. We add to the result in Gompers et al. (2003) by considering external and internal mechanisms of governance in non-US firms. We add also to Bebchuk et al. (2008), Black et al. (2006a,b), Drobetz et al. (2004), and Beiner et al. (2006) by calculating the impact of an index of governance on a large sample of international firms and on the basis of a wide range of provisions. Finally, compared to Klapper and Love (2004), our study period is six years study which allows a more objective and complete evaluation of changes in firms' corporate governance best practice. However, we acknowledge that a more detailed comparison between the results in the literature and the ones in this study cannot go much beyond this, as the data and the estimation techniques used in these different studies are not the same.

We can conclude that convergence holds at the empirical level. However, this should not be considered as putting an end to discussion of corporate governance for the following reasons.

First, more theoretical work is required. The idea of a best model is *a priori* incompatible with the inclusion of country or firm differences. If this holds true, then the analysis should be oriented towards a more systematic assessment of the role of corporate governance in preserving firm or country differences, especially when these characteristics are at the basis of the drivers of growth. This suggests that there should be different models of corporate governance that can co-exist or be combined. An immediate result would be that firms and countries would not be evaluated according to a single reference framework, but rather on the basis of distinctive patterns of analysis. This option would stimulate empirical research since each pattern of analysis could be elaborated to generate attributes and scores of governance to account for the variety of situations observed at the firm- and country-levels. Ultimately, this would refine the results obtained so far which are necessarily highly contingent on the

US-centric nature of the datasets used (in the present paper also), and do not account fully for non-US specificities. This will be a long term research agenda.

Shorter term research should be developed at the empirical level to increase our understanding of the impact of the adoption of the US best practice and how it operates at firm-level, and especially in non-US firms. The natural progression in the literature on international comparisons would be to try to investigate firm-level differences in more detail. Aggarwal et al. (2010) contribute by comparing governance of non-US and comparable US firms to define a ‘governance gap’. For the typical non-US firm, the governance gap is negative in that the firm’s governance is worse than the governance of its matched US firm. Aggarwal et al. find that the relation between firm value and the governance gap is quite important when comparing firms with similar characteristics. Considering firm-level indexes of corporate governance, non-US firms, on average, have worse governance than comparable US firms. They find also that non-US firms gain more from better governance than their matched US firms, than they lose from having worse governance. We think there may be some important differences to be investigated also within the population of non-US firms: it is still not so clear that UK firms have better governance and performance than their matched German or French firms, or *vice versa*. In a way, this emerging line of research is trying to solve the basic concern with comparative studies: apples should not be compared with oranges, only apples to apples comparisons make sense.

Another important, related aspect on the empirical research agenda is whether standard corporate governance should continue to be diffused among the firms in both US and non-US countries, which requires more research. Our study shows that changes in the standard deviation of CGQ produces important changes in Tobin’s Q, NPM and ROA at firm-level. Our regression results and robustness checks suggest also, that between 2005 and 2008, the influence of CGQ on Tobin’s Q became more

important. This suggests that corporate governance can promote value and firm performance while simultaneously making them more dependent on changes in CGQ. The adoption of US best practice in non-US firms potentially promotes increased volatility in value and firm performance over time. We think these aspects should be investigated by thorough econometric analysis in a near future.

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List of tables

Table 1 Corporate Governance Quotient criteria

Board Structure	Audit
Board Composition	Audit Committee
Nominating Committee	Audit Fees
Compensation Committee	Auditor Rotation
Governance Committee	Auditor Ratification
Board Structure	Executive and Director Compensation
Board Size	Cost of Option Plans
Changes in Board Size	Option Re-Pricing
Cumulative Voting	Shareholder Approval of Option Plans
Boards Served On - CEO	Compensation Committee Interlocks
Boards Served On - Other than CEO	Director Compensation
Former CEO's	Pension Plans for Non-Employee Directors
Chairman / CEOs Separation	Option Expensing
Board Guidelines	Option Burn Rate
Response To Shareholder Proposals	Corporate Loans
Boards Attendance	Progressive Practices
Board Vacancies	Retirement Age for Directors
Related Party Transactions	Board Performance Reviews
Charter/Bylaws	Meetings of Outside Directors
Features of Poison Pills	CEO Succession Plan
Vote Requirements	Outside Advisors Available to Board
Written Consent	Directors Resign upon Job Change
Special Meetings	Ownership
Board Amendments	Director Ownership
Capital Structure	Executive Stock Ownership Guidelines
Anti-Takeover Provisions	Director Stock Ownership Guidelines
Anti-Takeover Provisions Applicable	Officer and Director Stock Ownership
Under Country(local)Laws	Director Education
	Director Education

Table 2 Number of firms by country and by industry

Country	No. Firms	Industry	No. Firms
Australia	141	Automobile & Components	63
Austria	25	Banks	153
Belgium	31	Capital Goods	284
Canada	240	Commercial Services & Supplies	95
Denmark	28	Consumer Durables & Apparel	120
Finland	34	Consumer Services	73
France	104	Diversified Finance	122
Germany	103	Energy	90
Greece	51	Food Beverage & Tobacco	121
Hong Kong	113	Food & Staples Retailing	48
Ireland	20	Health Care Equipment & Services	63
Italy	89	Hotel Restaurants & Leisure	61
Japan	638	Household & Personal Products	19
Luxembourg	6	Insurance	76
Netherlands	58	Material	266
New Zealand	23	Media	123
Norway	27	Pharmaceuticals & Biotechnology	79
Portugal	15	Real Estate	113
Singapore	73	Retailing	108
South Korea	14	Semiconductors & Semiconductor Equipment	33
Spain	68	Software & Services	117
Sweden	55	Technology Hardware & Equipment	128
Switzerland	73	Telecommunication Services	72
United Kingdom	594	Transportation	122
		Utilities	74

Table 3 Summaries of Firm-Level Performance Variables

Variables	Description
Stock Return	Average Annual Return
Dividend Yield	Dividend Per Share as a Percentage of the Share Price
Tobin's Q	Market value of equity plus total liabilities divided by Total Assets
ROA	Return on Asset is the ratio of Income on Book Value of Total Asset
NPM	Net Profit Margin is the ratio of Income on Sales
Size	Logarithm of Total Assets
R&D/Sales	Ratio of [Research and Development] on Sales
Sales Growth	Average growth rate of Sales
Intang	Firm's intangible concentration estimated as [Property Plant and Equipment] on Sales
MTBV	Ratio of [Market Value of the Ordinary(Common) Equity] on [Book Value of Ordinary(Common) Equity]
Market Capitalization	[number of shares] * [share price]

Table 4 Summary Statistics of Variables

	Mean	Sd.	Min	25%	Median	75%	Max
CGQ	0.54	0.28	0	0.30	0.56	0.79	1.00
Stock Return	0.14	0.43	-0.99	-0.09	0.10	0.32	6.41
Dividend Yield	2.41	2.08	0.00	1.1	1.89	3.2	45.98
Tobin's Q	1.05	0.87	0.003	0.58	0.85	1.24	8.93
ROA	0.07	0.084	-0.79	0.03	0.06	0.11	0.96
NPM	0.17	0.49	-7.26	0.05	0.10	0.21	6.74
Size	16.45	2.74	0	14.40	16.15	18.66	23.91
R&D/Sales	0.06	0.23	0	0.01	0.02	0.05	4.53
Sales Growth	1.08	0.26	-0.29	0.98	1.04	1.12	4.52
Intang	0.91	2.42	0.00	0.16	0.31	0.61	25.50
Ln(MTBV)	0.63	0.88	-2.81	0.15	0.55	0.99	14.67
Ln(MarketCapitalization)	0.63	1.65	-0.59	13.55	14.54	15.58	19.81

Table 5 Summary Statistics of Variables of CGQ in five Quintiles

	CGQ	5%	25%	50%	75%	95%
	No. Firms	2665	2659	2662	2662	2662
CGQ	Mean/Median	0.13/0.13	0.32/0.31	0.50/0.50	0.70/0.70	0.90/0.89
	SD.	0.06	0.05	0.05	0.06	0.05
Stock Return	Mean/Median	0.12/0.07	0.17/0.09	0.18/0.13	0.14/0.12	0.11/0.08
	SD.	0.41	0.45	0.41	0.40	0.46
Tobin's Q	Mean/Median	0.96/0.81	0.97/0.81	1.06/0.83	1.14/0.9	1.19/0.98
	SD.	0.76	0.79	0.91	0.98	0.92
ROA	Mean/Median	0.07/0.06	0.06/0.06	0.07/0.06	0.07/0.07	0.07/0.08
	SD.	0.07	0.07	0.08	0.08	0.11
NPM	Mean/Median	0.19/0.10	0.14/0.09	0.17/0.11	0.19/0.12	0.15/0.13
	SD.	0.42	0.43	0.51	0.42	0.51
Size	Mean/Median	16.94/17.02	17.56/18.33	16.40/16.29	15.76/15.59	15.03/14.98
	SD.	2.93	2.82	2.70	2.32	1.81

Table 6 Correlations of selected variables

	CGQ	Tobin's Q	Size	R&D/Sales	Sales Growth
CGQ	1.0000	0.1632***	-0.0419	0.0624***	-0.0467**
Tobin's Q	0.0915***	1.0000	-0.3758***	0.1800***	0.1855***
Size	-0.2658***	-0.0708***	1.0000	-0.0298**	0.1012***
R&D/Sales	0.0881***	0.1154***	-0.1874***	1.0000	0.0360**
Sales Growth	0.0044	0.0642***	-0.0091	0.1516***	1.0000

This table provides the pair-wise correlation (below diagonal) and Spearman (above diagonal) correlations of Tobin's Q, CGQ, and control variables. The definition of all the variables can be found in Section 3. ***, **, and * indicate significance at 1%, 5% and 10% two-tailed levels.

Table 7 – Endogeneity test of CGQ (Stock Market Performance)

Endogeneity test of endogenous regressors (dependent variable Stock return)		Endogeneity test of endogenous regressors (dependent variable Dividend Yield)	
Chi-sq(1)	63.492 (0.000)	Chi-sq(1)	0.113 (0.736)
Wu-Hausman F test:	59.917 (0.000)	Wu-Hausman F test:	0.129 (0.719)
Durbin-Wu-Hausman chi-sq test:	59.820 (0.000)	Durbin-Wu-Hausman chi-sq test:	0.131 (.718)
H0: the CGQ variable is exogenous. H0 rejected at 1% by all of the three tests: the regressor is endogeneous.		H0: the CGQ variable is exogenous. We cannot reject H0: the regressor is treated as exogenous.	

Table 8 Stock Market Performances (IV estimation)

	Stock Return
CGQ	0.101*** (3.00)
LnMC	0.028*** 7.67
LnMTBV	0.128*** (11.71)
Country Dummies	Yes
Industry Dummies	Yes
Sample Size	5482
Centered R ²	0.1156
Uncentered R ²	0.2679
Hansen J statistic	0.004 (0.9516)
Kleibergen-Paap rk LM statistic	1419.12 (0.000)

This table shows results of instrumental variables estimation (2SLS) of the determinants of firm-level market valuation and governance. The dependent variables is Stock Return. CGQ is the governance indicator. LnMC is the natural log of Market Capitalization. LnMTBV is the natural log of market to book value. The definition of these variables can be found in section 3. Firm-level data is from 2003-2008. Z-values based on heteroskedasticity robust standard errors are shown in parentheses. *, **, and *** indicate significance level at 10%, 5% and 1% respectively. Instruments are CGQ_{t-1} , CGQ_{t-2} , LnMC, LnMTBV, Country Dummies, Industry Dummies.

Table 9 Dividend Yield (OLS estimation)

	Dividend Yield
CGQ	0.735*** (3.34)
LnMC	-0.273*** (-7.51)
LnMTBV	-0.360*** (-4.71)
Country Dummies	Yes
Industry Dummies	Yes
Sample Size	7289
Adjusted R2	0.0878

This table shows results of pooled OLS estimation of the determinants of firm-level market valuation and governance. The dependent variable is Dividend Yield. CGQ is the governance indicator. LnMC is the natural log of market capitalization. LnMTBV is the natural log of market to book value. The definition of these variables is provided in Section 3. Firm-level data are for 2003-2008. T-values based on firm-clustered standard errors are shown in parentheses. *, **, and *** indicate significance level at 10%, 5% and 1% respectively.

Table 10 – Endogeneity test of CGQ (Market Value)

Endogeneity test of endogenous regressors (dependent variable Tobin's Q)	
Chi-sq(1)	0.113 (0.736)
Wu-Hausman F test:	0.129 (0.719)
Durbin-Wu-Hausman chi-sq test:	0.131 (.718)
H0: the CGQ variable is exogenous. We cannot reject H0: the regressor is treated as exogenous.	

Table 11 Firm Valuations

	Tobin's Q					
	OLS	OLS	OLS	FE	OLS	FE
	(1)	(2)	(3)	(4)	(5)	(6)
CGQ	0.2583*** (4.43)	0.2559*** (4.35)	0.4354*** (4.44)	0.1237** (2.31)	0.2629*** (3.26)	0.1182** (2.30)
Size		0.0084 (1.32)	0.0114 (1.23)	0.5751*** (18.19)	-0.0084** (-1.09)	0.5436*** (17.40)
Sales Growth		0.2358*** (5.11)	0.3988*** (3.87)	-0.0893* (-1.80)	0.1131 (1.37)	-0.1197** (-2.23)
R&D/Sales			-0.0521 (-0.29)	0.0037 (0.10)	0.5537 (1.39)	-0.2455 (-1.52)
Intang			0.0365 (0.84)	-0.0092 (-0.20)	0.0541 (1.44)	0.0407 (0.76)
ROA					5.2736*** (8.08)	1.3876*** (3.08)
NPM					-0.0512 (-0.22)	-0.398** (-2.45)
Industry Dummy	4 digit	4 digit	4 digit	No	4 digit	No
Adjusted R ²	0.1684	0.1749	0.1875	0.3483	0.4132	0.3603
Sample Size	8487	8363	4252	4252	4205	4205

This table shows results of pooled OLS estimation of the determinants of firm-level market valuation and governance. The dependent variable is Tobin's Q, which is defined as market value of equity plus total liabilities divided by total assets. CGQ is the governance indicator. Size is the natural log of total assets. Sales growth is the annual average growth rate of sales. R&D/Sales is the ratio of R&D expenditure to total sales. Intang is the ratio of property, plant and equipment to total sales. ROA is Return on Assets. NPM is Net Profit Margin. Definitions of these two variables are provided in Section 3. Firm-level data are for 2003-2008. T-values based on firm-clustered standard errors are shown in parentheses. *, **, and *** indicate significance level at 10%, 5% and 1% respectively.

Table 12 Robustness Check

	Industry adjustedQ	Tobin's Q					
		2003	2004	2005	2006	2007	2008
CGQ	0.2123*** (4.91)	0.3105*** (3.62)	0.3233*** (4.16)	0.1750** (2.55)	0.1940** (2.52)	0.3418*** (4.32)	0.4878*** (5.83)
Size	-0.0147*** (-3.54)	-0.0316*** (-3.70)	-0.0019 (-0.28)	-0.0260*** (-4.15)	0.0028 (0.39)	0.0155** (2.05)	0.0501*** (5.68)
Sales Growth	0.1053** (1.96)	0.1852* (1.79)	0.7156*** (3.45)	0.2204** (2.43)	0.0806 (0.96)	0.2725*** (2.76)	0.1166 (1.23)
R&D /Sales	0.7259*** (8.83)	1.0052*** (3.98)	0.8711*** (4.74)	0.3934*** (2.66)	0.3463*** (2.69)	0.5804*** (2.94)	-0.5205** (-2.52)
Intang	-0.0248*** (-1.42)	0.0718 (1.35)	0.0879** (2.18)	0.0652** (1.97)	0.1041*** (2.58)	0.0962** (2.45)	0.1311*** (2.66)
ROA	5.1773*** (31.41)	2.4099*** (6.88)	3.7323*** (10.42)	4.3578*** (13.88)	3.8347*** (13.94)	3.9887*** (14.93)	4.4584*** (12.01)
NPM	0.0427 (0.62)	0.4824** (2.22)	-0.1981 (-1.18)	-0.1979 (-1.41)	0.1331 (1.36)	0.2368* (1.88)	-0.1900 (-1.15)
Industry Dummy	No	4-digit	4-digit	4-digit	4-digit	4-digit	4-digit
Adjusted R ²	0.2963	0.3582	0.4078	0.4879	0.4317	0.4806	0.5036
Sample Size	4205	702	703	717	714	706	702

This table shows results of cross section regression by year. The first column is the result of the robustness check using Industry adjusted Tobin's Q, which is defined as Tobin's Q minus the median Q of the corresponding industry. In all the rest of the table, the dependent variable is Tobin's Q which is defined as market value of equity plus total liabilities divided by total assets. CGQ is the governance indicator. Size is the natural log of total assets. Sales growth is annual average growth rate of sales. R&D/Sales is the ratio of R&D expenditure to total sales. Intang is the ratio of property, plant and equipment to total sales. ROA is Return on Assets. NPM is Net Profit Margin. The definitions of these two variables are provided in Section 3. Firm-level data are for 2003-2008. T-values are shown in parentheses. *, **, and *** indicate significance level

at 10%, 5% and 1% respectively.

Table 13 – Endogeneity test of CGQ (Operating Performances)

Test of endogenous regressors (dependent variable ROA, tested regressor CGQ)		Test of endogenous regressors (dependent variable NPM, tested regressor CGQ)	
Chi-sq(1)	6.189 (0.0129)	Chi-sq(1)	0.195 (0.6586)
Wu-Hausman F test:	6.5818 (0.0104)	Wu-Hausman F test:	0.210 (0.647)
Durbin-Wu-Hausman chi-sq test:	6.6346 (0.0100)	Durbin-Wu-Hausman chi-sq test:	0.211 (0.646)
H0: the CGQ variable is exogenous. H0 rejected at 5% and 1% by the three tests: the regressor is endogeneous.		H0: the CGQ variable is exogenous. H0 cannot be rejected: the regressor is treated as exogeneous.	

Table 14 Operating Performances (IV estimation)

	ROA		
	(1)	(2)	(3)
CGQ	0.0122*** (2.59)	0.0285*** (8.68)	0.0502*** (6.70)
Size		0.004*** (8.90)	0.005*** (7.21)
Sales Growth		0.0266*** (4.56)	0.0549*** (4.99)
R&D/Sales			-0.1333*** (-6.34)
Intang			-0.0018 (-0.62)
Industry dummy	4-digit	4-digit	4-digit
Sample Size	8467	8328	4230
Centered R ²	0.0854	0.1157	0.2024
Uncentered R ²	0.4944	0.5126	0.6019
Hansen J statistic	0.063 (0.802)	1.155 (0.2825)	0.077 (0.7812)
Kleibergen-Paap rk LM statistic	2465.70 (0.000)	2058.64 (0.000)	917.79 (0.000)

This table shows results of instrumental variables estimation (2SLS) of the determinants of firm-level operating performance and governance. The dependent variable is ROA. CGQ is the governance indicator. Size is the natural log of total assets. Sales growth is the annual average growth rate of sales. R&D/Sales is the ratio of R&D expenditure to total sales. Intang is the ratio of property, plant and equipment to total sales. LnMTBV is the natural log of market to book value defined as market value of equity divided by the book value of equity. Firm-level data are for 2003-2008. Z-values based on heteroskedastic robust standard errors are shown in parentheses. *, **, and *** indicate significance level at 10%, 5% and 1% respectively. Instruments are CGQ_{t-1}, CGQ_{t-2}, Size, Sales Growth, R&D/Sales, Intang, and industry dummies.

Table 15 Operating Performances (OLS and FE)

	NPM		
	OLS (1)	OLS (2)	FE (3)
CGQ	0.291*** (4.51)	0.0654* (1.00)	0.1014** (1.98)
Size		-0.0256*** (-3.23)	0.5881*** (22.7)
LnMTBV		0.3991*** (13.42)	-.0027 (-0.09)
Industry dummy	4-digit	4-digit	No
Adjusted R ²	0.2811	0.3378	0.182
Sample Size	7783	7535	7535

This table shows results of pooled OLS and Fixed Effects estimation of the determinants of firm-level market valuation and governance. The dependent variable is (Here, the NPM is in its logarithm form). CGQ is the governance indicator. Size is the natural log of Total Assets. LnMTBV is the natural log of market to book value defined as market value of equity divided by the book value of equity. Firm-level data is from 2003-2008. T-values based on firm-clustered standard errors are showed in parentheses. *, **, and *** indicate significance level at 10%, 5% and 1% respectively.

Appendix A

	Governance Measures	Governance Standards
Board Structure	Board Composition	At least 2/3 of the directors on the board should be independent
	Nominating Committee	This committee of the board should be composed solely of independent directors
	Compensation Committee	This committee of the board should be composed solely of independent directors
	Governance Committee	The functions of a governance committee should be handled by a committee of the board, typically the nominating committee or the governance committee
	Board Structure	Directors should be accountable to shareholders on an annual basis
	Board Size	Generally, boards should not have fewer than 6 members or more than 15 members. A board of between 9 and 12 board members is considered ideal.
	Changes in Board Size	Shareholders should have the right to vote on changes to expand or contract the size of the board
	Cumulative Voting	Shareholders should have the right to cumulate their votes for directors
	Boards Served On-CEO	In addition to serving on his own company's board, the CEO should not serve on more than two other boards of public companies
	Boards Served on -Other than CEO	Outside directorships should be limited to service on the boards of five or fewer public companies. A service limit of four or fewer public company boards is considered even better
	Former CEO's	Former CEOs should not serve on the board of directors
	Chairman/CEOs Separation	The positions of chairman and CEO should be separated or a lead director should be specified
	Board Guidelines	Board Guidelines should be published in the proxy on an annual basis
	Response To Shareholder Proposals	Management should take action on all shareholder proposals supported by a majority vote within 12 months of the shareholders' meeting
	Boards Attendance	Directors should attend at least 75% of board meetings
Audit	Board Vacancies	Shareholders should be given an opportunity to vote on all directors selected to fill vacancies. In cases where the company has a classified board, a director filing a vacancy should stand for election along with the class of directors to be voted on at the next meeting of shareholders
	Related Party Transactions	CEO's should not be the subject of transactions that create conflicts of interest as disclosed in the proxy statement
	Audit Committee	This committee of the board should be composed solely of independent directors
	Audit Fees	Consulting fees (audit-related and other) should be less than audit fees
	Auditor Rotation	The company should disclose its policy with respect to the rotation of auditors
	Auditor Ratification	Shareholders should be permitted to ratify management's selection of auditors each year

Charter/Bylaws	Features of Poison Pills	Shareholders should be permitted to approval shareholder rights plans (i.e. poison pills). Plans with the following features are considered shareholder friendly: 3 year independent director evaluation, sunset provision, qualified offer clause, and a trigger threshold of 20% or more
	Vote Requirements	A simple majority vote should be required to amend the charter/bylaws and to approve mergers or business combinations
	Written Consent	Shareholders should be permitted to act by written consent
	Special Meetings	Shareholders should be permitted to call special meetings
	Board Amendments	Management should not be permitted to amend the bylaws without shareholder approval
	Capital Structure	Common stock entitled to one vote per share and declawed preferred stock are viewed favorably
Anti-Takeover Provisions	Anti-Takeover Provisions Applicable	Incorporation in a state without anti-takeover provisions, or opting out of such protections is viewed favorably
	Under Country(local)Laws	Incorporation in a state without anti-takeover provisions, or opting out of such protections is viewed favorably
Executive and Director Compensation	Cost of Option Plans	An option-pricing model is used to measure the cost of all stock-based incentive plans. The cost is compared to an allowable cap that is based upon company-specific factors including industry, market capitalization, performance, and levels of cash compensation. The estimated plan cost is compared to the allowable cap.
	Option Re-Pricing	Shareholder approval should be sought prior to re-pricing underwater stock options. Plan documents should be written to expressively prohibit re-pricing without prior shareholder approval.
	Shareholder Approval of Option Plans	All stock-based incentive plans should be submitted to shareholders for approval
	Compensation Committee Interlocks	No interlocking directors should serve on the Compensation Committee
	Director Compensation	Director should receive a portion of their compensation in the form of stock
	Pension Plans for Non-Employee Directors	Non-Employee directors should not participate in pension plans
	Director Option Expensing	Companies are moving toward option expensing
	Option Burn Rate	Burn rates are considered excessive where average annual option grants exceed 3% of outstanding shares over the past three years
	Corporate Loans	New loan programs under stock option plans are now prohibited. Plans containing these provisions are flagged for this negative plan feature
Progressive Practices	Retirement Age for Directors	A retirement age or term limits serve as useful tools for ensuring that new board talent is regularly sought
	Board Performance Reviews	A policy of conducting regular board performance reviews should be disclosed
	Meetings of Outside Directors	A policy specifying that directors should meet without the CEO should be disclosed
	CEO Succession Plan	A board-approved CEO succession plan should be in place and evaluated by the

			directors periodically
		Outside Advisors Available to Board	A policy authorizing the board to hire its own advisors should be disclosed
		Directors Resign upon Job Change	A policy requiring directors to resign upon a change in job status should be disclosed
Ownership		Director Ownership	Each director owns stock in the company
	Executive	Stock Ownership Guidelines	Executives and directors should be subject to stock ownership guidelines
		Officer and Director Stock Ownership	Officers and directors should have a significant ownership position in their company's stock
Director Education		Director Education	All board members should participate in "ISS accredited" director education programs

Appendix B – Results of Econometric Estimations, Japanese Firms

VARIABLES	Stock Market Performance		Firm Value				Operating Performance			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Stock Return IV ^(b)	Div Yield OLS	Tobin's Q OLS ^(a)	Tobin's Q OLS ^(a)	Tobin's Q OLS ^(a)	Tobin's Q FE ^(a)	NPM (OLS)	NPM (FE)	ROA IV ^(c)	ROA IV
CGQ	0.938*** (0.0946)	-0.196*** (0.0720)	0.202** (0.0953)	0.206* (0.123)	0.246** (0.102)	0.298*** (0.0725)	-0.136 (0.0887)	0.0590 (0.0722)	-0.00347 (0.0134)	0.00283 (0.0139)
lnMC	0.0206** (0.00922)	-0.103*** (0.0122)								
lnMTBV	0.244*** (0.0298)	-0.371*** (0.0277)					0.509*** (0.0321)	-0.112** (0.0534)		
Size			0.144*** (0.0176)	0.148*** (0.0218)	0.0772*** (0.0141)	0.501*** (0.0327)	0.112*** (0.0143)	0.740*** (0.0407)	0.0124*** (0.00113)	0.0125*** (0.00126)
Sales Growth			0.450*** (0.110)	0.633*** (0.157)	0.186** (0.0940)	-0.0444 (0.0477)			0.0644*** (0.0121)	0.0885*** (0.0197)
R&D/Sales				1.461* (0.788)	0.939 (0.729)	-0.893 (0.550)				0.00977 (0.0622)
Intang				0.0492 (0.0631)	0.0274 (0.0624)	0.0171 (0.0989)				-0.0116*** (0.00425)
ROA					3.504*** (0.963)	-0.590 (0.549)				
NPM					1.236** (0.602)	0.795* (0.410)				
Constant	-0.607*** (0.191)	3.787*** (0.300)	-2.559*** (0.465)	-3.015*** (0.476)	-0.959*** (0.266)	-8.965*** (0.668)	-4.799*** (0.356)	-17.09*** (0.786)	-0.277*** (0.0273)	-0.283*** (0.0347)

Observations	1,820	2,600	2,735	2,083	2,073	2,073	2,568	2,568	1,832	1,395
R-squared	0.093	0.310	0.343	0.308	0.506	0.462	0.422	0.244	0.306	0.284

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

- Notes:
- (a) Firm-clustered standard errors
 - (b) Instruments are CGQ_{t-1} , CGQ_{t-2} , LnMC, LnMTBV, Country Dummies, Industry Dummies.
 - (c) Instruments are CGQ_{t-1} , CGQ_{t-2} , Size, Sales Growth, R&D/Sales, Intang, and industry dummies.